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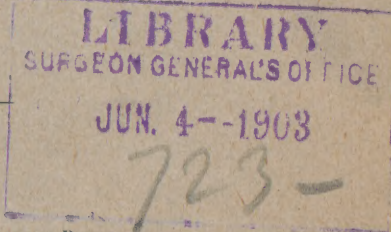
Cold Baths; Their Use and Abuse.

Read before the Clinical Society of Washington.

BY JOHN D. THOMAS, M.D.
WASHINGTON, D.C.

REPRINTED FROM THE
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COLD BATHS; THEIR USE AND ABUSE.

I do not intend to go into elaborate detail as to the history of the ablutions of man from the time Adam and Eve in their pristine bathing costumes, plunged into the cooling waters of Eden to the present era, when their descendants are carrying the rage for everything antique to the point of fashioning their bathing costumes as nearly as possible after those of their good old father and mother.

Suffice it that the cold bath maintains its right to belong to the D.A.R. of therapeutics by tracing its ancestry back to the fountain head of medicine, Hippocrates. Musa, Galen, Paulus Ægineta, one of the Savonarolas, Van Helmont, Blair, Huxham, Floyer, Hoffman, the Hahns, Wright, Currie, Priessnitz, Fleury, Brand, Jurgensen, Winternitz, Baruch, thus runs the pedigree, long and distinguished enough to have it fare better in this generation; and certainly should procure a hearing for it from any collection of medical men.

One reason for my choosing this subject was the seeming lack of interest displayed (except in connection with typhoid fever) by the profession of this country in a question of so great weight in many dangerous diseases. My remarks will deal only with one phase of hydrotherapeutics, namely, the cold bath. For hydrotherapeutics in general is too broad and massive a subject to be discussed in one paper. And further I do not wish to be classed with the water curists; but the wheat can be separated from the chaff only by discussion, and I trust we will be repaid by the amount of wheat we garner at the end.

As the realm of the physician includes the *preservation* as well as the *restoration* of health, a fact too

often lost sight of not only by the laity but also by the profession, I wish to embrace in this discussion the use of the cold bath as a conservator of health as well as a therapeutic agent in disease; and also the abuses of the bath.

In order to recognize pathologic conditions in the human economy, it is of paramount importance to first become acquainted with the normal. So in therapeutics, it is necessary to first know the effect upon the healthy body of the agent you desire to use in disease. I have never forgotten the principle drilled into me at college by that great teacher, the late Dr. Wm. B. Towles, of the University of Virginia: "Never prescribe empirically if you can help it. Study and know the physiologic action of your agent, and you put yourself upon a scientific basis from which you can not be routed." But how soon do most of us depart from this good maxim, as from many others learned at the feet of such Gamaliels, especially when we get into the swing of dispensary practice. So the more thoroughly to comprehend the effects of the cold bath, let us study its physiologic action, through the skin upon the system.

Histologically the skin consists of epidermis, cutis vera, subcutaneous fatty tissue, sweat glands, blood vessels, and nerve terminals. The blood vessels ramify in the papillæ and in the subcutaneous tissue around the sweat glands and hair follicles. The nerves terminate in fine fibrils between the cells of the epidermis. *Physiologically* the skin is a mechanical protection to the internal organs of the body; it is an eliminative organ; it is the great regulator of the body temperature, the principal channel of the loss of heat in man, the other great factor being the lungs. The subcutaneous fatty tissue acts as a non-conductor of heat, thus helping to retain the body temperature at normal. The body temperature is regulated through reflex action, by vaso-motor control, control of heat production, of respiration, circulation and of sweat glands. The skin is the telegraph instrument which sends

messages of warning and command to all the centers of the complex nervous mechanism of the system. Such is the normal function of the skin. And it is only one step further to know the action of cold water upon the system, when applied to the surface of the body.

It has been discovered by Blix and Goldscheider that there are in the skin special nerve terminals for heat, cold and pressure. And that those for cold act with lightening-like rapidity, while those for heat act more slowly. When cold water is first applied to the skin there is momentary contraction of all the capillaries by reason of the stimulation of the vaso-motor constrictor nerves. But this is followed by a dilatation, according to the physiologic law that muscle recovers from stimuli as slowly as it acts. According to Baruch, "the sphygmograph demonstrates the fact that the dilatation of the peripheral vessels which ensues upon reaction is not accompanied by a loss of tone and is not passive, but is probably due to an excitation of the inhibitory nerves." The opposite effect is shown when hot vapor baths are given. It is a demonstrated fact that cold raises, while heat lowers the tone of the vessel walls. But if there is a *continuous* application of cold to the surface the vessels contract again permanently, having no reactionary dilatation.

The impression of the cold water upon the thermic terminals in the skin is carried direct to the centers in the brain and cord, and reflexes are sent to the heart, to increase the rapidity and force of its beats, and to the respiratory center to deepen, accelerate and strengthen the inspirations, demonstrated by throwing cold water in the face of a fainting person; and also by the sudden plunge into the cold bath, the effort to inspire being so pronounced as to abort, because the muscles can not respond quickly enough. The respirations then become regular and deep; and this deepening and strengthening of the respirations counteracts upon the circulation, helping and strengthening it,

demonstrating very prettily the interdependence and community of action of the physiologic functions of the system. This general stimulation to the nervous system has the effect of a tonic upon it, and the whole economy feels the benefit—the secretory, excretory, circulatory, respiratory, motor, reproductive—all.

There is an increase in the *amount* of urine eliminated, but of lower specific gravity. The circulatory changes and temporary checking of perspiration are no doubt accountable for the increased amount, and other things being equal, increased volume means decrease in specific gravity.

A very important effect of the cold bath upon the system—the reduction of temperature—is considered by a great many physicians, especially in this country, the *only one*. This fallacy should be eradicated. The real benefits to be derived from the cold bath rightly applied have been so lost sight of, and in fact so little known by the profession at large, that when the looked for great reduction in temperature was not forthcoming in a case in which they used the much vaunted cold bath, but used it ignorantly and unscientifically, they have cried “anathema, maranatha” upon all hydrotherapeutics.

The pivotal point of all good effects to be got from a reduction of temperature by the cold bath is that there *must be* a good cutaneous circulation during the bath. The skin itself being a bad conductor could not eliminate much of the body heat by simple contact with the cold water. And the action of the continuous cold upon the surface would contract all the vessels and force the blood into the internal organs, thus causing a rise instead of a fall of temperature. Fleury of France has shown that a person dipped into a bath of 48 to 52 degrees F. for thirty minutes reduced the surface temperature; but the internal temperature not in the least. Thus the object is to overcome the contraction of the arterioles of the skin caused by the continuous cold necessary in a bath of from ten to thirty minutes. Brand of Stettin has found the

remedy in simple mechanical friction of the surface either with the hand or a rough cloth. The constriction of the vascular walls is inhibited; the tone of the walls not being lost as in the hot bath, and the accelerated heart action sends the warm blood to the surface where it is cooled and returns to the internal organs, while more warm blood takes its place, and thus a continual interchange going on soon cools the whole body.

Upon tissue metamorphosis also is the beneficial effect of the cold bath shown, especially in phthisical patients. The increased circulation increases the functional activity of all organs and hence the tissue changes. "And Liebermeister has proven that oxidation is increased by the external application of cold shown by the excretion of carbonic acid so long as the body temperature is not much disturbed." (Baruch). So much for the physiologic action. If we understand that thoroughly, the mastery of the technique will be easy, for we will know the reasons for every move—not be working empirically.

Great stress is laid upon the exactness of the technique by those who are authorities upon hydrotherapeutics; but if they would spend the same amount of energy and exhortation upon impressing the importance of a thorough knowledge of the physiologic action of the agent to be used, the different steps in the technique would be so thoroughly appreciated that any omission or error would at once be perceptible.

The cold morning bath in health is a good thing if properly and judiciously performed, and *not abused*. For those beginning its use it is well to first stand in about eight or ten inches of warm water and sponge off with water gradually cooled until they can with comfort take a plunge bath at 80 or 75 degrees F. for the first two or three days; the temperature of this being gradually lowered to 60 or 50 degrees F., which is easily borne, producing a healthy reaction and glow. It accelerates the blood flow; raises blood pressure, thus flushing the eliminative organs after

their night's work, and starting them on their day's duties fresh and invigorated. Just as we exercise the voluntary muscles and nerves by gymnastics, so are the involuntary muscles of the cutaneous vascular system exercised by the gymnastics of contraction and dilatation. The great temperature regulator of the body is kept in order. It stimulates the nerve terminals and gives tone to the whole nervous mechanism. By keeping the normal functions of the skin at par it aids and relieves the other eliminative organs of the body. Thus as an aid in the preservation of health it has a distinct and useful place in our armamentarium.

A form of bath which appears to have many advantages as a therapeutic agent, but which I have never seen used, is the half bath. The technique is briefly as follows; eight or ten inches of water at a moderately warm temperature in the tub; patient sits in the water with cold towel around the head; patient and attendant rub the body well while attendant pours and dashes the cold water over the head, shoulders and back. This is continued from ten to thirty minutes, friction being kept up all the time. A most excellent thing in this bath for some conditions, especially respiratory affections, is the affect gained by dashing the cold water on the body. The after-treatment is the same as in the full bath which is given below.

The full bath is typified in the Brand bath. I will run over rapidly the main points as described by Baruch in Hare's System of Therapeutics: Patient is prepared by giving a stimulant just before being put into the bath (one-half to two ounces of brandy). Preparations are screened from patient because of psychic disturbance. Tub is rolled up to the side or end of bed, and patient after having face and chest bathed with ice-water (I have found serviceable a towel soaked in cold water applied to the head) is lowered into the water which is at the required temperature, according to the condition of patient. The

whole body, up to the chin, is immersed in the bath, and immediately the attendant or attendants, two are preferable, begin applying *gentle friction* to the surface of body with the open hand. Patient will complain that he is freezing and can not breathe, but reassure him and keep him in the bath for at least fifteen minutes, continuing friction all the time. The best guide to the safety of the bath is the condition of patient. Cyanosis of lips or face is a signal that circulation is failing and we must remove the patient at once. Another sign of collapse is a thready and rapid pulse. After remaining in bath about fifteen minutes, lift the patient up gently, letting the water drip off for a minute, and lay him over on a linen sheet spread over a blanket. The sheet is wrapped around him, being tucked between arms and chest and between limbs. If temperature had been high, above 103 degrees, the blanket is also wrapped snugly around him, and he is left with hot bottles at his feet to sleep, but if temperature was below 103 degrees when he was put into bath, he is rubbed dry with the sheet and towels and put to bed. [At this stage I have always found it a good plan to give a little stimulant (one-half to one ounce of whisky). Osler recommends the same in his "Practice."]

The bath which is most used I think, especially in private cases, and which I found gave splendid results, was the so-called "graduated full bath." It is simply a cooling of the water gradually after the patient is in the full bath, by adding either cold water or ice. The same methods are followed out as in the Brand bath, except that the length of time in the bath is increased to double. The patient does not undergo the intense shock of being suddenly plunged into ice-cold water.

The therapeutics of the cold bath may be summed up as follows; 1, as antipyretic; 2, as a general nervous and muscular sedative and tonic. Osler thus sums up the good effects in typhoid fever; 1, the reduction of fever; 2, clearing the intellect, lessening

stupor and disappearance of muscular twitchings; 3, general tonic action on nervous system, especially the heart; 4, insomnia lessened; 5, most important of all the mortality is reduced to a minimum. Hare in the Boylston Prize Essay on "Fever; its Pathology and Treatment," says: "Cold bathing is a power for good before which every other measure must stand aside."

The idea is quite prevalent in this country among the laity, and indeed to a deplorable extent among the profession, that the use of the cold bath is restricted, if used at all, to typhoid fever. I wish to draw your attention more particularly to its use in other diseases than typhoid. The brilliant results achieved in this disease can be found by referring to almost any recent work on the "Practice of Medicine." And the erstwhile unknown and unsung Brand of Stettin has floated, and justly so, into the realm of fame in his tub, as did Diogenes of old.

Its use in the exanthemata is sometimes of great advantage. In *typhus* it was used by Currie in an outbreak in Liverpool in 1792. He used cold sea water a 60 degrees F., and poured it "over the naked bodies of those whose strength was not greatly reduced, and whose heat was steadily above the temperature in health." He had great success with this disease. Jurgensen recommends it in his work "Pathologie und Therapie." Osler says it "should be thoroughly and systematically employed as in typhoid. Strümpell says, "besides good nursing a judicious employment of baths is certainly our chief reliance for lessening the severity of many of the symptoms, such as febrile, nervous and pulmonary disturbances, as well as for averting many dangerous complications." Manuel Dominguez, Professor of Therapeutics in Medical School of City of Mexico, writing in Hare's System of Therapeutics, speaks in the highest terms of the use of cold baths in this disease; but personally prefers to use the tepid bath.

Scarlet fever.—Again let me quote that great

pioneer in hydrotherapeutics, Currie, in his experience with this terrible disease in his two boys, showing his perfect confidence in the efficacy of the cold bath to do all that could be done. "I shut myself up with these boys, and with plenty of pump water and a pocket thermometer prepared, not without anxiety, to combat this formidable disease. As soon as the sensation (of heat) was steady in my eldest boy, I stripped him and poured four gallons of water over him of the temperature of 64 degrees. The usual good effects immediately appeared, but at the end of two hours he was as hot as ever: the remedy once again applied, and repeated as the return of heat indicated. By the time the eldest was ready for his third affusion, the youngest was ready for his first. The heat rose in the eldest to 109 degrees, in the youngest to 108 degrees, and the pulse in each was upward of 150. In thirty-two hours the first had the affusion fourteen times; eight times cold, twice cool, and four times tepid; twelve affusions sufficed in the case of the youngest, of which seven were cold. The fever in both was completely subdued. On the morning of the third day they were both evidently safe." He also reports 150 cases treated by the cold bath.

Osler says on this disease, "In cases of high and rapidly increasing fever the graduated bath should be used." Strümpell says the same thing. Dr. Hiram Corson of Pennsylvania says, "rarely has any one made a more careful trial of any remedy than I have made of this, in a practice of fifty-nine years, under the daily watch of intelligent physicians, anxious no doubt for my success, but doubtful of the propriety of my practice, and too timid to resort to measures to them so heroic. And now in closing my career as a practitioner, and looking back on the countless fights I had with death in hovel and in palace, I can truthfully declare that no means ever used by me, or which have ever been known to me as used by others, in scarlet fever, have so successfully

warded off its blows and shielded patients from harm and restored them to health as the use of cold water and ice." Dr. Alexander Goldstein¹ reports from the Buda Pesth epidemic of 1891, 231 cases of scarlatina in which cold baths were chiefly used. When they needed an antipyretic the baths were used in preference to all others, and his testimony is, they "acted excellently." The good effect was not only in lowering the temperature, but also in improving respiration, innervation and cutaneous action. They used a form of the graduated bath, pieces of ice moved back and forward in the water causing waves of cold to impinge upon the body. Dr. Reimer, who treated over 3,000 cases of scarlatina by various methods, has the following to say about cold baths: "The efficiency of full cold baths was undoubted in scarlet fever, if they were used methodically and with proper precautions. The patient is plunged into a tub half filled with water at a temperature of from 57 to 54 degrees F. After removing him from the water, he must be rubbed briskly and wrapped in a woollen blanket. The temperature frequently drops several degrees; patients are much relieved and desire a repetition. In scarlatina the indications for hydrotherapy vary with the progress of the disease." His experience with the gradually cooled bath is that it is pernicious in this disease. Ziemssen also adds his testimony to the good effects of the cold bath in scarlet fever, putting it before antipyretic drugs.

In *smallpox* the use of the cold bath is limited. Currie and others used it to some extent. Strümpell recommends it in the initial stages to reduce fever. Osler says the cold bath at 70 degrees F., repeated every three hours in cases of pyrexia combined with delirium and subsultus is much preferable to the medical antipyretics. But the general concensus of opinion does not recommend it as a routine practice, the warm or tepid bath being preferable in the eruptive stage.

¹ Baruch: Uses of Water in Modern Medicine.

The other exanthemata rarely demand the use of the cold bath, but if the fever rises very high, there is no better remedy than the cold bath to equalize it.

Rheumatic fever. For the very high fever sometimes encountered in this disease we have a most valuable remedy in the cold bath; and in fact the only agent which has proved of any use in combating the extreme hyperpyrexia. The results obtained, the reduction of temperatures which had reached the flood-tide mark of 110 F. are certainly remarkable, and stand as an incontrovertible argument for the efficacy of the cold bath as an antipyretic.

Neither Strümpell nor Osler in their text-books on practice have much to say upon the treatment of hyperpyrexia in rheumatism, but both recommend the cold bath or cold pack as the best agents to use. Stewart of McGill University, Montreal, says: "When hyperpyrexia has set in, it is useless to employ drugs of any kind to reduce it. It is only wasting valuable time, the only measure of real value is cold, and it is clear from the general experience on this point that the sooner it is employed the better are the patient's prospects for recovery. The general cold bath is certainly the most effectual way of carrying out the antipyretic action of cold; in some cases a single bath is all that is necessary." In others as many as twenty-six have been given. Wilson Fox collected a series of twenty-two cases from 1867 to 1871; temperature from 106 to 111.7 degrees; eighteen were treated by ordinary means, without cold, and all died. The other four were treated by the cold bath, three recovered, highest temperature being 110 degrees. Dr. Male collected in the ten years ending 1890 sixteen cases; temperature from 106 to 110.4 degrees. The pack was used in eight, with two deaths; and the bath in the other eight with one death. Baruch reported a case, temperature 106 degrees; cold bath given and ice applied to joints; recovery. Medley, Murchison, Ringer, Charcot and others have reported cases with temperature reduction of from 5 to 8

degrees. The Committee of the Clinical Society of London made the following report on sixty-seven cases from the ten years ending 1879. Synopsis given by White in his "Text-book of General Therapeutics." "Of the cases that were not bathed only one in which the maximum temperature exceeded 106 degrees recovered; of the cases that were bathed, fifteen (or five-eighths of the total) in which the maximum exceeded 106 degrees recovered. Again six out of eleven fatal cases which were not bathed, the maximum was under 106 degrees but in only three out of the twenty-two fatal bathed cases was it so low. Often the treatment is of no avail; but on the other hand it frequently turns the scale toward recovery, when the temperature has not reached an extreme height. In a considerable number of deaths, recourse to bathing has been too tardy to be effectual. The treatment must be begun without any delay whatever, directly hyperpyrexia, however slight, is detected, and must be persevered in unremittingly so long as the temperature remains high. The committee truly says that a strict watch must be kept for the prodromal signs; two, which are most noteworthy, are delirium and a cessation of the articular pain. Cold bathing not only reduces the temperature, but also allays the delirium, brings down the frequency and increases the strength of the pulse and promotes sleep even in the most desperate cases. If it were made a rule to put the patient in a cold bath whenever the temperature reaches 105, the mortality in rheumatic hyperpyrexia would greatly fall." But great care must be taken in these cases for they are all in a very precarious condition when they reach the point of needing the bath. And the true rationale of the cold bath as an antipyretic must be borne in mind—do not literally swamp the internal organs with the hot blood by driving it all away from the surface. Especially watch the weakened heart in the cases that are treated late.

Insolation.—In this condition where high fever

exists the cold bath is the only efficient remedy to combat it. In this as in rheumatic fever extreme temperatures are often successfully reduced, the patient being brought from a state of gravest collapse to a condition of comparative safety. I have seen cases brought in unconscious with temperature from 107 to 109 degrees F., recover with bath treatment. -

Anemia.—In 1878 M. Thernes demonstrated with Hayem's hemometer that the judicious application of cold to the periphery increased the number and improved the quality of the red blood corpuscles. And Winternitz has demonstrated an improvement in the oxyhemoglobin constituents, by Fleischel's hemometer. And to these Baruch adds his testimony of numerous cases of anemia and chlorosis yielding to hydropathic measures after iron treatment had proved futile. Professor Shattuck of Harvard University (in Hare's Syst. Ther.) also recommends for this disease, after vigorous frictions of the body in the mornings, the cold affusions while seated in a few inches of warm water.

Phthisis.—Winternitz says in a recent article in the *Deutsche Medicin. Wochenschrift* that cold water is the best means to fortify the system against phthisis by reason of the general tonic influence on the system. And further in cases already advanced the cold water decreases the fever, increases the body weight, decreases the night sweats, lightens and diminishes the cough and expectoration, and other subjective complaints; there is an improvement of the local conditions, lessening and disappearance of the bacilli; and these statements he has proven by clinical work.

Pneumonia.—Before the Tenth International Medical Congress in Berlin, Dr. A. H. Smith read a paper in which he showed the true rationale of heart failure, which is the fatal element in pneumonia, to be the overwork of the right heart in trying to force blood into the consolidated lung tissue. And as a remedy for this he proposed to dilate the blood vessels of the remainder of the body so they could hold some of the

blood that was flooding the right heart. To accomplish this he advocates medicinal remedies. But have we not most efficient and rational aid to the fulfilment of the indications in the cold bath? Medicinal agents can not maintain for any length of time the dilatation of the cutaneous vascular system unless the tone of the vessel walls is assured. The cold bath while rendering this necessary aid, at the same time gives tone to the whole nervous system, strengthens the respirations, stimulates the heart, quiets delirium, reduces the temperature, and gives the patient a much needed rest and sleep. All this I have seen accomplished by the cold bath. And while my personal experience has been limited to one case, that one was so markedly benefited by it that a lasting impression was made upon me. The case came into Gouverneur Hospital, New York, one morning with a temperature of 100 degrees F., and fine râles in one lung. By evening the temperature had risen to 106 degrees F., pulse 130, respiration 45, rapid consolidation going on in lung, and patient getting delirious. There was a typhoid patient in the same ward being bathed every three or four hours, and everything being convenient and patient almost *in extremis*, I had him given a plunge both at 79 degrees F. which was gradually reduced with ice to 40 degrees. It lasted about ten minutes. This bath did not reduce the temperature very much, but the general effect upon the patient was good. Delirium disappeared. The following morning, temperature still being quite high, another bath was given at from 72 to 44 degrees F., and from that time the temperature continued to fall until it reached normal on the fourth day of the disease. The patient had a rise of temperature on the ninth day, but nothing in the lungs to account for it. It went up to 102.6 degrees suddenly on the evening of the twelfth day, and as suddenly down again below normal the next morning. For six days these remissions occurred when temperature went to normal and stayed there, patient soon afterward recovering perfectly. I saw

patient some weeks later and found lungs normal and healthy.

The percentage of mortality has been, and still is so high in pneumonia, that any means of lowering it should be received with favor by the profession, and especially when this means is based upon a rational physiologic foundation, proven by thousands of trials sanctioned and conducted by the best clinicians of the day. And yet so great is the timidity, or shall I say conservatism, of the profession at large, that I doubt if one practitioner in a thousand could be found to give the cold bath a trial in his private practice; or even the cold pack, for which neither the patient nor doctor seem to have the same horror.

Since the old adage that "figures can't lie" has been reconstructed to read "nothing is such a convincing liar as figures," I will not attempt to give you the record of thousands of cases from some of the best men of this and other countries, but will content myself with presenting to you some of the opinions of these men, formed from large experiences.

Strümpell recommends the cold baths in severe cases, not for the pyrexia simply, but for their effect upon the respiration and nervous system. Jurgensen advocates the very cold baths, preceded by stimulants, and he confirms his recommendations with wonderful results obtained. Penzoldt says after treating 2,200 cases: "If the indication is, beside reducing temperature to improve the circulation, respiration and cerebral activity, and further expectoration, preference should always be given to a cautious bath treatment." Fisser reduced the mortality almost half in 230 cases treated by baths as against the same number treated without. Vogl (Baruch, "Uses of Water in Modern Medicine"), chief of Munich Military Hospital, has found the bath, as in typhoid, of great value in pneumonia. Dr. Boardman Reed of England, says in a paper on pneumonia "that water locally applied either by wet pack or in the form of baths, after the Brand method, is the most efficient single remedy or thera-

peutic measure for acute pneumonia." In our country we find Osler recommends it in very high fever. Pepper says of pneumonia in children that when high fever is present recourse may be had to strong antipyretics "but hydrotherapeutic measures are more efficient." He recommends cool and cold sponging, cold pack and baths. Graham of Jefferson Medical College says that pyrexia often reaches a dangerous height in pneumonia, and "undoubtedly the safest and most reliable means of reducing this pyrexia or hyperpyrexia is by the external application of cold." "The cold bath has," he says further, "notwithstanding its advocacy by many prominent American physicians, and the lessened mortality following its use, never become popular in this country." This he attributes to the necessity of portable tubs and attendants. And finally Simon Baruch says: "We have every indication in the treatment of pneumonia fully met by the properly adopted bath, namely, 1, to reduce the temperature; 2, to tone up the action of the heart; 3, to refresh the failing nerve supply of the heart and lungs; 4, to deepen the respiration; 5, to enlarge the surface of the blood; 6, to restore the lost tone of the capillaries." I can not agree with Baruch in his sweeping statement that "every indication is fully met by the bath." But this point I wish to emphasize, if used judiciously in conjunction with other remedies its value is of unmeasured worth.

Abuses and contra-indications.—It is certainly a fact that one disastrous case from cold bathing will do and indeed has done, more toward creating a feeling of antagonism to the method than 1,000 cases of undoubted success will do toward forwarding it; and that, in spite of the fact that it was done ignorantly, or in direct disregard of all physiologic laws. Baruch mentions a case in point. A young hospital physician and teacher expressed abhorrence of the cold bath treatment of typhoid; and when asked why, he said he had seen a nurse killed by it, and this is the description of their method as given by him: "We

endeavored to reduce her temperature by wrapping her in a sheet, placing her on a Kilbs cot, and sprinkling her with ice water." Do you wonder that it proved to be her winding sheet? And Baruch gives another instance of the same method being used in one of the hospitals of a large city. Another way in which the cold bath is brought into ill repute is by not exercising the proper amount of care in selecting the cases for baths. Patients with atheromatous vessels, with organic heart disease, with hearts which are already on the verge of dissolution from some exhausting disease, should never be put in the cold bath. Indeed, I am of opinion that there are some nervous organisms which can not stand the cold plunge even in health, lacking the one desideratum, namely, the ability to react quickly and completely. While mentioning the abuses of the cold bath in therapeutics, it will not be out of place to give a very striking instance of the extent to which their fervor will carry some in using it as a hygienic measure. I was told by a young man who had been in the habit of taking a cold bath every morning, that he was in the country and arising early and having no means handy for taking his accustomed cold bath, he went down to the river, and breaking a hole in the ice, jumped in. He was fortunate to escape serious results; but it demonstrates the folly of carrying any measure to extremes. The one cardinal point always to be borne in mind in health and disease is *to get reaction*.

And now in closing let me emphasize the point, that although the cold bath is a great aid in the battle against disease, it is not a specific for the germ disease, nor in fact for any disease. It is only one of the agents to combat the symptoms, but a *powerful one*. And if used rationally, understandingly, conscientiously, I think you will agree with me in giving it its rightful place among the foremost therapeutic agents of the day.

The Cairo Flats.

